



PATENT  
Docket No.: 45751USA6C

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

JOSEPH P. KRONZER et al.

Serial No.: 08/661,834

Filed: June 11, 1996

For: **FIBROUS FILTRATION FACE  
MASK**

**BOX AF**

Group Art Unit: 3312

Examiner: Aaron J. Lewis

**REPLY BRIEF**

Assistant Commissioner for Patents  
Washington, DC 20231

Dear Sir:

Appellants submit the following remarks in response to new points made by the Examiner in the Examiner's Answer.

In the Examiner's Answer, claims 25-34 have been rejected under 35 U.S.C. § 112, first and second paragraphs. This rejection was not made in the final Office Action that was mailed on October 2, 1996. Accordingly, appellants question whether this rejection can properly be made at this stage in the prosecution. Since appellants did not have the opportunity to address this issue in the Appeal Brief, appellants will respond to this rejection here in the event the Board determines that it has jurisdiction over the issue.

The essence of the Section 112, first paragraph, rejection is that the term "surface fuzz value" would not be understood by persons of ordinary skill, and therefore there could be "no assurance that those skilled in the art would be able to conclude with a reasonable degree of certainty whether or not this language (i.e. "surface fuzz value") was infringed."

The term "surface fuzz value" is thoroughly discussed in appellants' specification, particularly on pages 16-18. On those pages, appellants have described in detail how to perform

the test that provides a surface fuzz value for a molded fibrous shell. In carrying out the *Surface Fuzz Abrasion Test*, each molded shell is placed in a cup-shaped mandrel and is subjected to abrasion by dragging a stiff, flat brush over the surface of the mask from the base of one side to the base of an opposing side. A total force of approximately 1.3 Newtons is exerted by the brush on each shell. The brush is designated as a scrub team 1876 brush available from 3M Medical-Surgical Products Division, St. Paul, Minnesota. The number of bristles on the brush are specified, and their diameter is also given. The density to which the bristles are embedded in the brush is also described. After the brush is dragged over the molded shell, an arc of 50 millimeters in length is examined by each examiner, and a surface fuzz value is independently obtained by each examiner using the surface fuzz value scale set forth on page 17. The obtained values are averaged to determine the surface fuzz value for the particular shell.

The thrust of the Examiner's position is that different testers may arrive at different results, and therefore there would be difficulty in determining whether or not the claim was indeed infringed.

Appellants submit that it was not proper for the Examiner to reject their claims just because subjective human evaluation is required to arrive at a surface fuzz value. Essentially all tests require some degree of subjective human judgment. Claim interpretation itself also involves some subjective judgment. If the Examiner's position is not reversed, patent applicants would find it very difficult, if not impossible, to draft claims in many instances that would be capable of meeting such a standard.

In regard to the rejection under the first paragraph of Section 112, the Examiner takes the position that "[t]his terminology [surface fuzz value] is not taught in such a way as to enable those skilled in the art to reliably determine surface fuzz values." Appellants submit that this is an improper application of the first paragraph of Section 112.

As the Board is aware, the enablement requirement pertains to whether the specification teaches one skilled in the art how to make and use the invention; not how to enable a person skilled in the art to determine whether they meet a value set forth in the claim. Appellants' specification clearly describes how to make a molded shell that has a surface fuzz value not less than 7.5. Indeed numerous examples are provided that demonstrate this. Because the Examiner is not properly applying the first paragraph of Section 112, and apparently is confusing it with the requirements under the second paragraph, this rejection should be reversed.

The Examiner's Answer also contains a number of new points of argument that appellants respond to below.

On the third full paragraph on page 6 of the Office Action, the Examiner tries to connect appellants' reference to Dyrud's filtration layer to appellants' claim language. The Examiner points out that appellants' claims "don't appear to require that the fibers of the filtration layer become bonded together during the molding operation." Although the Examiner's statement is correct, it is not important.

Appellants claim a fibrous filtration face mask that contains a non-woven fibrous layer that is molded into a cup-shaped configuration. This non-woven fibrous layer contains thermally bonding fibers, including bicomponent fibers, and optionally staple fibers. Although this molded cup-shaped non-woven-fibrous layer is capable of filtering particles to some extent (see appellants' specification at page 8, lines 13-32), it is not referred to as a filtration layer. The art commonly refers to the molded cup-shaped layers as "shaping layers". Because appellants' claims fail to recite a filtration layer, the Examiner's statement (that the claims fail to require bonding amongst the fibers in the filtration layer) is immaterial.

The molded non-woven fiber layer recited in claim 25 is very different from the filtration layer that is surface-treated in Thiebault. Thiebault's filtration layer is not molded and neither is Dyrud's filtration layer. Thus, Thiebault does not teach or suggest appellants' molded cup-shaped fibrous layer, and its teachings would not be applied to Dyrud's molded shaping layer. This is the point that appellants made in their Appeal Brief. They were not trying to distinguish a "claimed filtration layer" with the prior art.

In the next paragraph on page 6, the Examiner takes the position that because Thiebault teaches smoothing of surface fuzz, its teachings would have been applied to Dyrud's teachings to arrive at a molded layer that contains a low degree of surface fuzz. This position is not correct. Thiebault's smoothes the surface of its *filtration layer* to form a skin on that surface to eliminate the need for an outer protective layer (see Thiebault's Figure 1 where number 5 and the phantom line designates an outer porous covering in the prior art which no longer needed). Smoothing the surface of Dyrud's shaping layer would not eliminate the need for a porous covering over Dyrud's filtration layer. Thus, a person of ordinary skill would not apply Thiebault's teachings that pertain to its *filtration layer* to Dyrud's *shaping layer*.

On page 8 in the second full paragraph, the Examiner states that Thiebault illustrates a filtration layer that is molded into a cup-shaped configuration. This is a misinterpretation of the scope and content of the Thiebault patent. In Thiebault, the rigid porous shell 4 is molded into a cup-shaped configuration. Filtering layer 1 is not. The filtering layer 1 is draped over the rigid porous shell.

In the sentence bridging pages 6 and 7 of the Examiner's Answer, the Examiner takes the position that a lack of correspondence between the shaping and filter layers in Dyrud and Thiebault is irrelevant because "neither the claims nor the propriety of the art rejection requires any such correspondence."

As indicated above, appellants have pointed out that the lack of correspondence between Dyrud's shaping layer and Thiebault's filtration layer is very important because it goes to the heart of the error in maintaining the Section 103 rejection. Thiebault does not suggest reducing the surface fuzz on a molded layer that contains thermally bonding fibers, including bicomponent fibers. Thiebault only suggests reducing the surface fuzz on a filtration layer that contains polypropylene dielectric fibers (see Thiebault at column 2, lines 33-34). The polypropylene fibers that are used in such filtration layers commonly are melt-blown microfibers that have diameters less than 10 microns (see, for example, U.S. Patents 4,729,371, 4,536,440 (column 3, lines 30-50), and 4,807,619 (column 6, line 63 to column 7, line 20)).

The Examiner's position that the claims need to require such correspondence makes no sense. It, of course, is not the purpose of the claim to show whether disclosures in references correspond to each other. In regard to the propriety of the art requiring such correspondence, this, appellants submit, may be needed to sustain a rejection under Section 103. It is not something that is needed to be shown to overcome an obviousness rejection.

In the first paragraph on page 8, the Examiner states that "none of claims 25-34 specify that each and every layer of the fibrous face mask of the instant invention has been subjected to a reduction in surface fuzz" and therefore the fact that Thiebault only discusses a reduction of surface fuzz on its filtration layer is irrelevant. The Examiner is correct that appellant's claims do not require that each and every layer have surface fuzz values not less than 7.5, but it is not irrelevant that Thiebault only discusses the reduction of surface fuzz in a filtration layer. The fact that Thiebault is reducing surface fuzz to eliminate the need for a surface covering exterior to the filter layer provides no motivation for reducing surface fuzz on Dyrud's shaping layer. Appellants' claims

outline a molded non-woven web that contains thermally bonding fibers and bicomponent fibers and that has a surface fuzz value of not less than 7.5. Thiebault's filtration layer, like many filtration layers, is a polypropylene electret web that would contain randomly intertangled mass of melt-blown microfibers. These fibers are not bonded to each other in a molded configuration like appellants' thermally bonded fibers and bicomponent fibers. Thus, it is not irrelevant that Thiebault only reduces surface fuzz on its filtration layer, and appellants' claims as presently written clearly are distinguishable from the teaching of Thiebault and Dyrud.

There appear to be inconsistencies in the Examiner's Answer. In the first sentence of the paragraph that bridges pages 6 and 7, the Examiner indicates that Thiebault does not disclose a molded cup-shaped configuration, but then indicates on page 8 in the second full paragraph that "Thiebault (Fig. 1) illustrates the filtration layer molded into a cup-shaped configuration of a face mask." If it is the latter position that the Examiner intends to maintain, this position is in direct contrast with the teachings set forth in Thiebault and the state of the art at the time appellants' invention was filed. Thiebault, like so many of the other references of record in this case -- see for example, U.S. Patents 4,536,440, 4,729,371, 4,807,619, 5,307,796, and European Patent Specification 0121299B1 -- disclose filtration layers where the fibers are not bonded together during the molding operation. The filtering layer relies on the rigid shell or shaping layer for its cup-shaped configuration.

On the top of page 9 of the Examiner's Answer, the Examiner cites, as a reason for maintaining the rejection, that appellants' claims do not define a molded shaping layer and do not define any motivation for reducing surface fuzz in a shaping layer in particular. Appellants find this statement most troublesome. Although the term "shaping layer" is not recited in the claims, that does not mean that the claims do not cover a molded shaping layer. The claims clearly recite a non-woven web that contains thermally bonding fibers, including bicomponent fibers, that is molded into a cup-shaped configuration. Such a product surely can be used as a shaping layer in a fibrous filtration face mask. In regard to the claims failing to "define any motivation for reducing surface fuzz in a shaping layer", it, of course, is not the purpose of the claims to define any such motivation. If this rejection is to be maintained, it is the prior art that must establish the motivation for combining the teachings of Dyrud and Thiebault.

In the first full paragraph on page 9, the Examiner states that appellants' interpretation of Thiebault "does not appear to be entirely accurate." Appellants strongly disagree. Thiebault

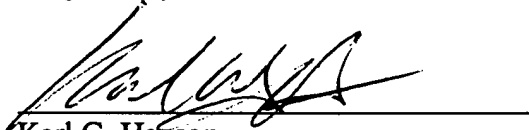
discloses that its masks are more comfortable or pleasant to the wearer because its invention eliminates the need for a porous surface covering. Thiebault apparently is teaching persons of ordinary skill that a lower pressure drop can be achieved by eliminating an outer porous covering from the face mask. Masks that demonstrate lower pressure drops allow moist exhaled air to be more easily dispelled from the interior of the mask. This is how Thiebault's mask allegedly provides more comfort to the wearer.

As appellants have repeatedly indicated, their invention provides a totally different kind of comfort to the wearer. Appellants' invention reduces surface fuzz on the molded cup-shaped layer so that the fuzz does not tickle the wearer's face and cause the wearer to remove the mask to relieve the itching sensation.

For the reasons discussed above and in the Appeal Brief, appellants respectfully submit that the Examiner should be reversed on the rejections under 35 U.S.C. § 103 and 35 U.S.C. § 112, first and second paragraphs.

Dated this 2nd day of June, 1997.

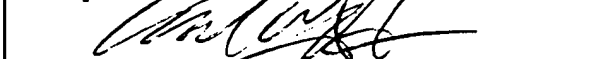
Respectfully submitted,



Karl G. Hanson  
Attorney for Appellant  
Registration No. 32,900

3M Office of Intellectual Property Counsel  
P.O. Box 33427  
St. Paul, Minnesota 55133-3427  
Telephone: (612) 736-7736  
Facsimile: (612) 736-3833

I certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on:

  
Karl G. Hanson

Dated: June 2, 1997